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Attorney's Docket No.: S1022/8047

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: Pascal MELLOTT
Serial No.: 09/047,252
Confirm. No.: 3048
Filing Date: March 24, 1998
For: CIRCUIT AND METHOD FOR AUTOMATICALLY LIMITING THE
AMPLITUDE OF BROADCAST AUDIO SIGNALS

Examiner: Brian T. Pendleton
Art Unit: 2644

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The undersigned hereby certifies that this document is being placed in the United States mail with first-class postage attached, addressed to Commissioner for Patents, Washington, D.C. 20231 on December 16, 2002.

Janine Michalski

Commissioner for Patents
Washington, D.C. 20231

Sir:

RESPONSE TO OFFICE ACTION

In response to the Office Action mailed July 17, 2002, reconsideration is respectfully requested in view of the following remarks. To further the prosecution of this application, Applicant has addressed each of the issues raised in the Office Action, as discussed below.

Claims 1, 3-17, and 19-21 are now pending in this application, of which claims 1 and 17 are independent claims. In this response, no claims have been amended. The application as now presented is believed to be in allowable condition.

A. Telephone Conference with the Examiner

Applicant's representatives appreciate the courtesies extended by Examiner Pendleton in granting and conducting a telephone conference on November 14, 2002. During the conference, Applicant's representatives and the Examiner discussed the scope and content of the cited Fuller and Blackmer references as they relate to the pending claims. The Examiner expressed

agreement overall with Applicant's representatives' technical analysis of the references (discussed further below), and indicated preliminarily that indeed motivation appeared to be lacking to combine these references. In particular, the Examiner acknowledged during the discussion that certain teachings of the Fuller reference relating to signal filtering appear to lead one away from implementing an RMS-based level detector as disclosed by Blackmer and, hence, an RMS-based feedback configuration for gain control, as covered by Applicant's claims.

While understandably reserving final judgment, the Examiner indicated that he would further consider the points raised during the telephone conference upon reviewing either a draft or formal response to the Office Action. The Examiner also indicated that he would be amenable to discussing the case further with Applicant's representatives upon reviewing a response so as to expedite prosecution toward allowance.

The various issues raised in the Office Action and discussed during the telephone conference are outlined in greater detail below.

B. Rejections under 35 U.S.C. § 103

Claims 1, 3-9, 11-17 and 19-21 were rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Fuller et al. (U.S. Patent No. 5,771,301) in view of Blackmer (U.S. Patent No. 4,404,427). Claim 10 was rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Fuller in view of Blackmer and Dasilva (U.S. Patent No. 4,654,610). Applicant respectfully traverses these rejections.

1. Discussion of References

a. Fuller

Fuller is directed toward a sound leveling system for reducing or substantially eliminating loud sound level changes caused by sudden transitions between stations, commercials and regular broadcasts (col. 1, lines 5-8). The sound limiting system of Fuller works by limiting the peak volume to keep the sound output volume at or below a maximum output value (col. 4, lines 4-7).

Fig. 4 of Fuller depicts a functional block diagram of an apparatus used to accomplish this limiting function. With reference to Fig. 4, Fuller discloses that before the sound signal inputs 30 and 34 (e.g., from a television or stereo source) enter a gain control portion beginning

with element 206, elements 202 and 204 are used to filter out frequency components above the audio spectrum as well as the DC components of the signal (col. 7, lines 39-60). Additionally, after having passed through the gain control element 206, the gain-controlled signal is once again filtered to eliminate low frequency components, and then rectified by an AC-DC converter 208 (col. 8, lines 12-17). Once the signal is rectified and converted to a representative DC signal, it is passed to the auto-level amplifiers and threshold integrator 210 which uses the time-weighted peaks of the signal to set the gain applied by the gain control element 206 (col. 8, lines 24-35).

b. Blackmer (U.S. Patent No. 4,404,427)

Blackmer is directed toward an audio reproduction system for generating improved ambient effects, such as those used in cinema (col. 1, lines 1-9). One exemplary implementation of such a system employs transmission delay of audio signals to create spatial awareness and depth (col. 1, lines 11-19). With reference to Blackmer's only figure, Blackmer uses low pass filters 36 and 40 in a delay line that provides a signal input to a voltage controlled amplifier 42, and employs a feed-forward input 46 based on an RMS level detector 50 to provide a control signal to the amplifier 42 (col. 2, lines 54-62; col. 3, lines 33-36).

In Blackmer, it is particularly noteworthy that the RMS level detector 50 receives an **unfiltered** audio input signal so as to obtain an accurate representation of the average input signal power and, hence, reliable RMS level detection.

2. The Combination of Fuller and Blackmer is Improper

The Office Action concedes that Fuller does not disclose feedback circuitry based on determining an RMS value of an audio signal, as recited in Applicant's independent claims. However, the Office Action contends that it would have been obvious to use the RMS level detector of Blackmer in the feedback configuration of Fuller. Applicant respectfully disagrees.

As discussed during the telephone conference, certain elements of Fuller lead one away from implementing an RMS-based feedback configuration for gain control. In particular, Fuller employs various filtering elements (e.g., see elements 202 and 204 of Fuller's Fig. 4) that may adversely affect an accurate determination of the RMS value of audio signals being processed, should RMS detection be implemented in Fuller's circuit. This notion is clearly supported by Blackmer's circuit; specifically the RMS level detector 50 shown in Blackmer processes an

essentially *unfiltered* audio signal as received. Accordingly, there is no motivation to combine Fuller and Blackmer in the manner set forth in the Office Action, nor is there any reasonable expectation of success that such a combination would function for its intended purpose.

For at least the foregoing reasons, the combination of Fuller and Blackmer is improper. Accordingly, the rejections of claims 1, 3-9, 11-17 and 19-21 under 35 U.S.C. § 103(a) over Fuller in view of Blackmer should be withdrawn.

Claim 10 was rejected as allegedly obvious over Fuller in view of Blackmer in further view of Dasilva. Since the combination of Fuller and Blackmer is believed to be improper, and since claim 10 depends from claim 1 (which is believed to be in condition for allowance based on the remarks above), claim 10 should be allowable based at least on its dependency.

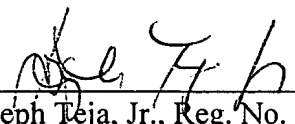
C. Conclusion

In view of the foregoing amendments and remarks, this application should now be in condition for allowance. A notice to this effect is respectfully requested. If the Examiner believes, after this amendment, that the application is not in condition for allowance, the Examiner is requested to call the Applicant's attorney at the number listed below to discuss any outstanding issues relating to the allowability of the application.

If this response is not considered timely filed and if a request for an extension of time is otherwise absent, Applicant hereby requests any necessary extension of time. If there is a fee occasioned by this response, including an extension fee, that is not covered by an enclosed check, please charge any deficiency to deposit account No. 23/2825.

Respectfully submitted,

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